

## WHAT IS CLAIMED IS:

1. A method for computing a point in a phase space, the method comprising the steps of

a) providing a first sequence of first data samples;

b) calculating a volatility of the first sequence of first data samples;

c) scaling the volatility with a factor, the factor being dependent on the length of the first sequence;

d) calculating a difference between a first data sample and a last data sample of the first sequence; and

e) determining a first and a second coordinate value of a point in phase space based on the volatility and the difference.

2. The method of claim 1 wherein the factor is related to the square root of the length of the first sequence.

3. The method of claim 1 wherein the sequence of data samples are ordered in a discrete time series.

4. The method of claim 1 comprising the further steps of

f) providing a probability distribution of the differences of consecutive data samples of the first sequence;

g) providing a probability threshold value; and

h) determining a sub-space of the phase space in which the point is situated with a probability equal to the probability threshold value, the determination of the sub-space based on the probability distribution and the probability threshold value.

5. The method of claim 4 wherein the probability distribution is a gaussian distribution.

6. The method of claim 5 wherein the probability threshold value is equal to one of the volatility and the volatility times an integer value.

7. The method of claim 4 wherein the sub-space has the form of one of a cone and the projection of a cone.

8. The method of claim 1 wherein each of the data samples are correlated to a price value and the difference is correlated to a return.

9. The method of claim 1 wherein each data sample is an intraday price fixing.

10. The method of claim 1 further comprising displaying a symbol on a location of a display unit corresponding to the first and second coordinate value.

11. The method of claim 10 further comprising the step of displaying a boundary line of the sub-space on the display.

12. The method of claim 10 comprising the further step of displaying a number of K frames  $FR_j$ , each of the frames  $FR_j$  visualizing one of a corresponding set of points  $p_0$  to  $p_i$  and a sub-set of the set of points.

13. The method of claim 12 comprising the further step of gradually decreasing the brightness and/or contrast of a point of the points being displayed, the decrease being inversely proportional to the index value of the point.

14. The method of claim 1 wherein the first sequence covers an intraday period.

15. The method of claim 1 further comprising

f) defining a hierarchical tree structure, the tree structure providing an index structure for accessing a database; and

g) providing a plurality of sequences each composed of data samples,

h) storing said plurality of sequences of data samples, the data samples being ordered in a time series, and each of the sequences being associated with a leaf of the hierarchical tree structure.

16. The method of claim 15 wherein each of the leaves of the hierarchical tree structure points to a set of sequences associated with a specific entity, the sequences of said set of sequences covering different time intervals.

17. The method of claim 15 wherein the database contains a plurality of files, each file storing a predefined set of sequences with the set of sequences stored in each file being associated with a specific distinct entity and being accessible by an identifier of the specific distinct entity.

18. The method of claim 17 wherein the specific distinct entity is a predetermined group of stock values, a stock portfolio or a stock or other financial index.

19. The method of claim 15 wherein the data samples are input into the database in real time with a predetermined delay.

20. The method of claim 15 further comprising

- i) storing a number of user defined portfolios which are retrievable by a key;
- j) retrieving sequences of data samples corresponding to a user defined portfolio upon a user request by querying the database;
- k) providing the user with the sequences of data samples;
- l) updating the sequences of data samples at regular time intervals; and
- m) discontinuing the updating process when a user has failed to perform an action during a predefined time interval.

21. A method for computing a curve in a phase space, the method comprising the steps of

- a) providing a first sequence  $s$  of first data samples;
- b) determining a set of sub-sequences  $s_0$  to  $s_{K-1}$  of the first sequence;
- c) calculating a volatility of the sub-sequence  $s_i$  for each sub-sequence  $s_i$  of the set of sub-sequences  $s_0$  to  $s_{K-1}$ ;
- d) scaling the volatility with a factor dependent on the length of the sub-sequence  $s_i$ ;
- e) calculating a difference between the first data sample and the last data sample of the sub-sequence  $s_i$ ; and
- f) determining a first and a second coordinate values of points of a curve in phase space based on the volatilities and the differences.

22. The method of claim 21 further comprising the step of defining a minimum length of the sub-sequence  $s_0$ , with all other sub-sequences  $s_1$  to  $s_{K-1}$  having a length greater than the minimum length.

23. A client computer system for computing a point in a phase space, the client computer system comprising

a) a sequencer for deriving a first sequence of first data samples;

b) a calculator for determining a volatility of the first sequence of first data samples and a difference between the first data sample and a last data sample of the first sequence;

c) a scaler for scaling the calculated volatility with a factor dependent on the length of the first sequence;

d) a plotter for determining a first and a second coordinate value of a point in a phase space based on the volatility and the difference.

24. The client computer system of claims 23 further comprising a second plotter for determining a sub-space of the phase space in which the point is situated with a probability being equal to a predetermined probability value, the determination of the sub-space being made responsive to the predetermined probability value and a probability distribution.

25. A computer program product for use on a client computer comprising:

a) a computer usable medium having computer readable program encoded thereon for performing the steps of;

i) reading a first sequence of first data samples from a server computer;

ii) calculating a volatility of the first sequence of first data samples;

iii) scaling the volatility with a factor dependent on the length of the first sequence;

iv) calculating a difference between the first data sample and a last data sample of the first sequence; and

v) determining a first and a second coordinate value of a point in phase space based on the volatility and the difference.

26. A computer readable medium having computer executable instructions for performing the steps recited in claim 1.

27. A server computer system comprising a computer program product according to claim 26 for downloading and execution by a client computer system.